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PUERPERAL CONVULSIONS—EXPECTANT TREATMENT—RECOVERY.

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OWING to the comparative rarity of the occurrence of puerperal convulsions in the private practice of most physicians, it is difficult to obtain a sufficiently extended basis, to form any decisive opinion from personal observation. It is in that view more important that all should contribute their quota, however limited, that others may, from the aggregate thus obtained, adduce conclusions that may either favor, qualify, or alter the method of treatment they have deemed most beneficial in similar cases. In furtherance of this object, I have very briefly condensed a report of seven cases that have occurred under my care.

These cases comprise primiparæ and multiparæ—all robust and plethoric. In two of these, the convulsions occurred *previous* to delivery and not subsequently—in two others they existed *after* delivery and not previously. In three cases they took place both before and after delivery. In only one of them were the forceps deemed advisable.

CASE I.—Mrs. H. P., æt. 30, multipara, of rather large size, and healthy, was taken with labor-pains on the night of Dec. 23, 1849, and was delivered, naturally, on the morning of the 24th of a living female child. Placenta expelled without difficulty.

On the 25th she was quite comfortable, the usual after-pains being slight.

26th.—Slept well last night, and was free from any trouble. Doing well.

On the 27th, I was sent for in great haste at 9, A.M. On arrival, found she had been suddenly seized with puerperal convulsions, immediately after being got out of bed into a chair. Found her with trismus of lower jaw, eyes fixed and staring, pupils insensible to

light, the whole muscular system violently convulsed, and the usual frightful aspect of this disease. Pulse small and weak, extremities cold, face sunken, with frothing at the mouth, and the peculiar hissing respiration common to such cases. This was followed by the usual profound coma. As soon as the power of deglutition would permit, carbonate of ammonia was administered every hour.

6½, P.M.—Has had convulsions of frequent occurrence and long continuance, alternating with profound coma. Applied mustard sinapisms to calves of legs and soles of feet.

28th.—Was free from convulsions from 10 last night till 5 this morning, when they again recurred. I now made trial of the remedy recommended so highly by Dr. Hamilton—gum camphor, one grain every half hour, accompanying it with a stimulating injection.

4, P.M.—Notwithstanding the administration of the camphor for the last ten hours, as well as a free operation from the bowels, the convulsions continue as severe and frequent as before. Strong beef-tea, by injection, was ordered when she was too insensible to swallow.

9½.—Convulsions still continue, though less frequently.

29th.—The convulsions, of thirty-six hours' continuance, have been succeeded by natural sleep of two hours' duration, from which the patient awoke, and has had no difficulty since.

Case II.—April 30, 1851, was called to Mrs. J. P., æt. 28, primipara, short, stout, and in robust health. The labor-pains, which had begun at 8, P.M., the evening previous, were now tolerably strong, and the os uteri was dilating well, but the perinæum was very rigid, and the progress of labor slow. At 11½, during a severe pain, a convulsion occurred, lasting five minutes. In half an hour afterwards, the child was expelled, stillborn. The placenta soon followed. In ten minutes after its expulsion there was another convulsion. During the succeeding twenty-four hours, thirteen convulsions took place, the last one being very severe, terminating in coma of four hours' duration, which gradually passed off, and for the first time in twenty-four hours consciousness returned.

May 2d, forty-eight hours after confinement. Is doing well, and has had no return of the spasms.

In this case no specific remedy was used. Ice to the head and mustard applications to the feet were, however, not omitted, and small doses of carbonate of ammonia were given.

Case III.—Mrs. W. S., æt. about 30, multipara, small figure and good health. July 26, 1856. Labor-pains commenced this morning. Os uteri dilating well. The pains becoming more severe, are now accompanied by convulsions, succeeded by coma. As the labor was progressing favorably, it was not interfered with,

and, in a short time, she was delivered of a living male child. The convulsions did not subsequently recur.

Case IV.—Mrs. L. D., æt. 26, primipara, size above medium, florid complexion, and vigorous health. July 9, 1857. Has had slight labor-pains since early morning. At 3, P.M., they were sufficiently strong to induce her to lie down. Soon after, in the midst of a severe pain, violent convulsions ensued, followed by the usual coma, and were repeated about every three quarters of an hour until 10, P.M., when, during a convulsion, the patient was delivered of a living female child. The placenta came away within half an hour. Instead of any relief being afforded in this case by the birth of the child, the convulsions continued with unmitigated severity, and were rapidly exhausting the patient, whose appearance was now most unpromising. The extremities were cold, the countenance sunken, the pulse barely perceptible, and, she being unable to swallow, stimulants and beef-tea were given by injection. From 3, A.M., until 2, P.M., eight convulsions occurred, which had now apparently exhausted the patient's strength, and she seemed to be rapidly sinking. The pulse could no longer be felt; the respiration grew slower, and finally ceased. On auscultation, however, there was found a faint pulsation of the heart. Inflation of the lungs was resorted to, though apparently a hopeless expedient, and this was assiduously maintained for more than half an hour, when a slight gasp indicated the possibility that these efforts would not prove unavailing. A longer continuance of artificial inflation resulted in finally establishing the respiration. During the succeeding half hour the breathing barely rose to 6 in the minute; in an hour more, to 8; in three hours to 12. The patient remained in the profound coma of the last convulsion twelve hours, then gradually recovered her consciousness, without any return of them.

In this case the convulsions were equally severe, and prolonged after childbirth as before. I should not omit to mention that the aid of both ether and chloroform was resorted to, in order to allay the spasms, without producing the slightest control over them, and it was therefore abandoned. Nourishment by the mouth while she was able to swallow, and by injections afterwards, was the sole reliance.

Case V.—Mrs. S. R., Dec. 7, 1857, multipara, healthy. Was delivered naturally, after a labor of twelve hours, of a male child. In this case the convulsions did not occur until after the birth of the child, and the expulsion of the placenta. After about an hour they ceased, and the patient regained her consciousness. This is the second instance that has come under my notice where the convulsions have occurred only *after* delivery.

Case VI.—Mrs. F. C., æt. 25, primapara, short, stout, and in robust health. Aug. 2, 1860. Labor-pains commenced at 6, A.M.

Convulsions occurred at 12, M., and continued at intervals of about half an hour, without any return of consciousness. Great œdema of both labia. Extreme rigidity of the os uteri, which dilated very slowly. Expectant treatment. Continue ice to the head and stimulating poultices to the feet. Convulsions continued until 6, next morning, when they ceased spontaneously, but the profound coma remains. Pulse 155. Respiration feeble, and now becoming very slow. The urgency of the symptoms demanded the application of the forceps, and, the condition of the os uteri permitting, delivery was effected at 10, A.M. The coma still continued until 6, A.M., of Aug. 4, twenty hours after delivery, and forty-two hours from the commencement of the convulsions. The patient regained her consciousness, and rapidly convalesced.

Case VII.—Mrs. H., multipara, of medium size, healthy. Aug. 28, 1860. Was taken with puerperal convulsions during the last week of gestation. Os uteri somewhat rigid and undilating. Within twelve hours, the convulsions and coma ceased, the patient recovered her sensibility, but delivery did not take place until six days afterwards, when she gave birth to a male child, without any return of convulsions.

It will be seen that the treatment of the above cases consisted in the entire avoidance of all violent remedies, dependence being placed rather on local applications and support of the system when needed, by nutriment and mild stimulants, thus affording nature an opportunity to resist and overcome the disease. The results showed her fully equal to the task.

A temporary trial of the effect of ether was attempted in Cases IV. and VI.; in the former, as has been stated, without any impression on them; in the latter they seemed to increase, though this may have been merely a coincidence rather than a result, but its further use was suspended.

That the few grains of camphor given in Case I., or the nominal dose of ammonia in Case II., had any real efficacy, can hardly be pretended. That powerful purgatives or emetics would have benefited any of them seems at least improbable. That they could have survived the Sangrado treatment, so universally recommended, may be pronounced doubtful, if not impossible. Owing to the frightful appearance of all the patients in this disease, the apparent danger of the symptoms, and consequent alarm of friends, have we not sometimes embarrassed rather than assisted Dame Nature?

We have on record the average fatality of the disease when treated according to the ordinary means advocated by high authority. In the cases reported by Dr. Collins, out of 16,414 deliveries there were 30 of puerperal convulsions. Of these, 5 died, or 1 in 6; and in the face of this appalling result, profuse bleeding was his main reliance. Prof. Huston relates 13 cases and 2 deaths, or in 6½. Dr. Merriman 48 cases, with 11 deaths, or 1 in 4⅓ near-

ly. Dr. Dewees has attended 9 cases, and 2 died, or 1 in 4½; he, also, was a firm believer in the lancet. Dr. Meigs has had 24 cases and 6 deaths, 1 in 4, and with that record is strong in the same faith. What the profession now most need, is a collection of statistics where the *Vis Medicatrix Naturæ* has been unfettered and enabled to assert her power.

In an able paper by Dr. Salter, some of whose views I cordially endorse, six cases are related in which he attributes the recovery to the use of stramonium. Might it not as properly be referred to his judicious avoidance of all the ordinary violent means which he condemns? Yet the administration of half-ounce doses of tincture of stramonium may be deemed bordering on the heroic, by one in favor of a conservative treatment. Had that remedy been given in the seven cases I have reported, stramonium might have obtained a credit to which it was not entitled.

Is it then asked, shall all active medication be withheld? My experience replies, the less the better. But this does not imply inactivity on the part of the physician. On the contrary, to decide whether the involuntary muscles of the womb are able in due time to accomplish the labor, unassisted, with greater safety to the mother and child; or when and to what extent shall artificial aid be given to hasten delivery; to relieve the bladder of the insensate form before its distension by urine adds to the danger of the patient; to test if the albuminous condition of the urine establishes the diagnostic that may prove probably a coincidence, but possibly a cause; all these, and other points that suggest themselves to clinical experience, will be found to tax the judgment of the physician and the resources of medical art, to insure the welfare of the patient, quite as much as the more popular routine of bleeding ad deliquium, the use of powerful purgatives, and similar measures.

To collate statistics requires only time and care—to draw just inferences from them is quite another thing. So much depends on the bias of the mind; prejudice, of which we may be totally unconscious, so easily creeps in to warp our judgment. It is so very natural as well as consolatory to think our remedy has cured, when perhaps the patient has simply survived both treatment and disease.

It is well to bear this in mind, in analyzing and comparing statistics. In referring to the reported cases of Drs. Collins, Huston, Merriman, Dewees and Meigs, we find that, on an average, only four fifths recover after bleeding, purgatives, &c. The six cases reported by Dr. Salter prove that they have all recovered without bleeding, and with stramonium. The seven cases that have formed the subject of this report show that an equally successful result may be obtained without the use of either—the entire treatment of the disease being based on the maxim, *Natura ducet.*

TABULAR STATEMENT OF CASES.

Case.	Primipara.	Multipara.	Before delivery.	After delivery.	Before and after.	Continuance of convulsions.	Duration of labor.	Male child.	Female child.	Stillborn.	Fatal.
I.		1		1		36	10		1		
II.	1				1	24	16		1	1	
III.		1	1			4	8	1			
IV.	1				1	36	18		1		
V.		1		1		1	12	1			
VI.	1				1	42	28	1		1	
VII.		1	1			6	8	1			
Total.	3	4	2	2	3			4	3	2	None.

NOTE.—Dr. Ramsbotham's report of 26 cases shows the still larger fatality of 10 deaths, or 1 in $2\frac{3}{5}$.

OVARIAN DROPSY—ACUTE DYSENTERY.

[Communicated for the Boston Medical and Surgical Journal.]

MESSRS. EDITORS,—Your JOURNAL for to-day (Nov. 22d), brings us a report from Dr. JACKSON, of a case of ovarian dropsy in a girl of 15 years. In Oct. 1855, I was called to a similar case. The patient was, I think, only 16, and reported the enlargement of the abdomen to have commenced three years before. She had felt well for more than two years after its commencement, but at this time complained of a tired sensation. The catamenia had never been regular—had occurred a few times about the period of the commencement of the abdominal enlargement, but had been entirely suppressed for some two years. She was of small stature, and presented much the appearance of being at the full term of pregnancy. I did not measure the circumference of the abdomen.

Under the use of iodide of potassium and iron, with alterative cathartics, her general health and strength greatly improved. Only slight and temporary effect was produced upon her size.

She was under treatment more or less until August, 1856, when she was tapped, and 18 1-2 pounds of perfectly pure serum were drawn off. I then applied an abundance of compresses over the abdomen, secured in place by a towel drawn tightly around the body. No fainting occurred. She lay quietly in bed forty-eight hours. I then removed the band and compresses. The anterior walls of the abdomen seemed to rest directly upon the posterior. The aorta, spine and kidneys could be clearly felt; but the stomach and intestines appeared to be entirely wanting. I re-applied the compresses and band, kept her in bed one week, then let her get up more and more each day. She recovered rapidly. The catamenia appeared after a few months, and she has as yet had no return of the disease.

Dr. Jackson also reports a case of *acute* dysentery relieved by a saline cathartic. This reminds me to say what I have often thought of saying, viz., that I am certain that cathartics are not enough, and opiates too much given in this disease. I mean in the acute form.

In the year 1838, I had a severe case of acute dysentery in the person of a sailor, on board a merchant ship in the Gulf of Siam. I used opiates freely, and used calomel also, as recommended by Dr. James Johnson. My patient grew worse and worse, and it became certain that he would die under that course of treatment. I then resolved to make use of Dr. Twining's method, as given in his work on Diseases of India. Accordingly, early in the morning, I gave pulv. jalapæ comp., ℈ ijss. It operated well, producing copious watery dejections, with great relief of the pain and fever. In the after part of the day, I gave ten grains of Dover's powder every four hours, to be followed the next morning by the pulv. jalapæ comp. in full dose. Under this treatment my patient rapidly recovered.

Since that time, I have always given cathartics freely in the *acute* forms of this disease, and with the most satisfactory results. Where there is reason to apprehend typhoid fever, it is necessary to proceed with caution, it is true, but still, give one or two cathartics at least. After this we must be governed by the developments of the case.

I have known many cases cured by one or two doses of Epsom salts. The pulv. jalapæ comp. in full doses, alternating with pulv. ipecac. et opii, as above, is often an excellent course of treatment. Ipecacuaha is an excellent remedy in these cases. The pill recommended by Dr. James Johnson, for "chronic biliary derangement," viz., Ext. colocynth comp. pulv., ʒi.; calomel, grs. xv.; tart. antim., grs. iv.; ol. carui, gtts. v.; aqua, q. s. M. Ft. pil. xxiv., is another favorite remedy with me, whenever there is a distinctly bitter taste in the mouth, or other evidence of biliary obstruction or derangement with the dysentery. I give from one to three of these pills every four hours till they operate.

After one or two doses of these pills, the other and more hydragogue cathartics do better usually; always alternating the cathartics with small doses of ipecac in some form, and most usually in the combination above named; but keep up the cathartics every day or every other day, till a careful observation of their operation shows that they should be discontinued. The presumption is that they should be continued till the tongue is clean, the fever gone, and the dysentery cured.

Acute dysentery is not often a local disease, but a local symptom of a constitutional or general disease. I think it is not unfrequently an effort of nature to relieve an obstruction of the portal circulation. In all such cases the pill above mentioned operates like a charm. It will also do the same, when an acute attack

of piles is brought on, as is not unfrequently the case, by a like obstruction in the circulation.

Yours, &c., STEPHEN TRACY, M.D.

Andover, Nov. 22d, 1860.

ON FERMENTED AND AERATED BREAD, AND THEIR COMPARATIVE DIETETIC VALUE.

BY J. DAUGLISH, M.D.*

SINCE the new process of preparing bread has been introduced, —a process which effects the raising of bread wholly by mechanical means, imparting to it the most perfect vesicular structure, while it leaves the constituents of the flour wholly unchanged and uncon-

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* As most of our readers are doubtless aware, Dr. Dauglish is the author of a new system of bread making that has excited considerable interest among chemists during the last twelvemonth.

An extended description of this method was read at the Aberdeen meeting of the British Association, in September, 1859, by Dr. Odling, from whose paper we take the following extracts:—

"It is well known that the vesicular character of ordinary bread results from the development of carbonic acid gas uniformly throughout a mass of fermenting dough, whereby a loose spongy texture is imparted to what would otherwise be a dense sodden lump of baked flour and water. In fermented bread the carbonic gas thus generated within the substance of the dough is a product of the transformation or degradation of one of the constituents of the flour, viz., of the starch or sugar.

"In the plan of Dr. Dauglish the carbonic acid is produced independently and superadded to the flour, which consequently need not undergo any degradation whatever. Water charged with carbonic acid (common 'soda water') is mixed under pressure with the flour, and the resulting dough, which becomes vesicular when the pressure is removed, is divided into loaves and baked in the ordinary way.

"The advantages claimed for the new process, are, 1st. Its cleanliness. Instead of the dough being mixed with naked arms or feet, the bread, from the wetting of the flour to the completion of the baking, is not, and scarcely can be, touched by any one. 2d. Its rapidity. An hour and a half serves for the entire conversion of a sack of flour into baked loaves, whereas, in the ordinary process, four or five hours are occupied in the formation of the sponge, and a further time for the kneading, raising and baking of the dough. 3d. Its preventing deterioration of the flour. In making fermented bread from certain varieties of flour, not in themselves unwholesome, the prolonged action of warmth and moisture induces a change of the starchy matter of the flour into dextrine, whereby the bread becomes sodden and dark colored. This change is usually prevented by the addition of alum, which is, indeed, an almost necessary ingredient in the manufacture of bread from glucogenic flour. But in operating by the new process, there is no time for glucogenic change to take place, and consequently no advantage in the use of alum, with any description of flour. 4th. Its certainty and uniformity. Owing to differences in the character and rapidity of the fermentation, dependent on variations of temperature, quality of the yeast, &c., the manufacture of fermented bread frequently presents certain vagaries and irregularities from which the new process is entirely free. 5th. The character of the bread. Chemical analysis shows that the flour has undergone less deterioration in bread made by the new, than in that made by the fermented process. In other words, the percentage of extractive matters is smaller. The new bread has been tried dietetically at Guy's Hospital, and by many London physicians, and has been highly approved of. It is well known that for some years past, the use of fermented bread in dyspeptic cases has been objected to by members of the medical profession, the debris of the yeast being considered unwholesome and liable to induce acidity. 6th. Its economy. The cost of carbonic acid is alleged to be less than the cost of yeast. Moreover, in making fermented bread there is a small but necessary waste of the saccharine constituents, which is avoided by the new process. 7th. The saving of labor and health. It substitutes

taminated—there has not been wanting those who doubt whether the process of fermentation, by which bread has been hitherto prepared, is not really beneficial in other respects than that of imparting the vesicular structure to it; whether, in fact, the changes which the constituents of the flour—especially the starch—undergo, are not essential to healthy digestion in the stomach.

Although I believe there are few members of the medical profession who will be prepared to maintain that fermentation is beneficial, still, as some do hold such an opinion, and have asserted likewise that starch which has not undergone the fermentive process is wholly unfit for human food, I am desirous of stating what I believe are good reasons for rejecting the process of fermentation for the new one which I have introduced.

In order to dispose of the assertion that starch requires to be prepared by the fermentive changes to render it fit for human food, it is but necessary to remark, that the proportion which the inhabitants of the earth, who thus prepare their starchy food, bear to those who do not, is quite insignificant. Indeed, it would appear that the practice of fermenting the flour or meal of the cereal grains is followed chiefly by those nations who use a mixed animal and vegetable diet, while those who are fed wholly on the products of the vegetable kingdom reject the process of fermentation entirely. Thus, the millions of India and China, who feed chiefly on rice, take it for the most part simply boiled; and that large portion of the human race who feed on maize, prepare it in many ways, but they never ferment it. The same is true with the potato-eater of Ireland, and the oatmeal-eater of Scotland. Nor do we find that even wheat is always subjected to fermentation; but the peculiar physical properties of this grain appear to have tasked man's ingenuity more than any other, to devise methods of preparing from it food which shall be both palatable and digestible. In the less civilized states, a favorite mode of dressing wheat grain has been, by first roasting and then grinding it. On the borders of the Mediterranean it is prepared in the form of maccaroni and vermicelli, while in the East it is made into hard thin cakes for the more delicate, and for the hard working and robust into thicker and more dense masses of baked flour and water. Even in our nurseries wheaten flour is baked before it is prepared with milk for infants' food. The necessity of subjecting wheaten grain to these manipulations arises from its richness in gluten, and from the peculiar properties of that gluten.

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machine labor for manual labor of a very exhausting kind. The sanitary condition of journeymen bakers was investigated some time ago by Dr. Guy, and found to be most lamentable, from their constant night work and from the fatiguing and unwholesome character of their labor, particularly the kneading. In a politico-economical point of view, the process is important as removing bread-making from a domestic manual work to a manufacturing, machine work."

From the character of the apparatus, the process can only be used profitably on a large scale, and not in small bakeries. F. H. S.

If a few wheaten grains are taken whole and thoroughly masticated, the starchy portion will be easily separated, mixed with the saliva and swallowed, whilst nearly the whole of the gluten will remain in the mouth in the form of a tough tenacious pellet, on which scarcely any impression can be made. A similar state of things will follow the mastication of flour. In this condition, the gluten is extremely indigestible, since it cannot be penetrated by the digestive solvents, and they can only act upon its small external surface; hence the necessity to prepare food from wheat in such a manner as shall counteract this tendency to cohere and form tenacious masses. This is the object of baking the grain and flour as before mentioned, of making it into maccaroni, and of raising it into soft spongy bread; by which latter means the gluten assumes a form somewhat analogous to the texture of the lungs, so that an enormous surface is secured for the action of the digestive juices; and this I believe is the sole object to be sought in the preparation of bread from wheaten flour.

Wheat is said to be the type of adult human food. It supplies, in just proportions, every element essential to the perfect nutrition of the human organism. And yet in practice we find that the food which we prepare from it, and furnish to the inhabitants of our large towns and cities, is quite incapable alone of sustaining the health and strength of any individual. This is the more remarkable, since in Scotland we find that the food prepared from the oat, a grain possessing the same elements of nutrition as wheat, though in a coarser form—furnishes almost the exclusive diet of a very large number of the hardiest and finest portion of the population.

In the large towns of France, wheaten bread certainly forms a very large proportion of the diet of the laboring classes, but not so large as oatmeal does in Scotland. And yet it has been remarked by contractors for public works on the Continent, that the chief reason why the Englishman is capable of accomplishing double the work of a Frenchman is, that the one consumes a very large proportion of meat, while the diet of the other is chiefly bread. In Scotland, however, the laboring man is capable of sustaining immense fatigue upon the nourishment afforded by oatmeal porridge.

The deficiency in wheaten bread in affording the nourishment due to the constituents of the grain, is to be attributed solely to the mode of preparing the flour, and the process followed for making that flour into porous bread.

The great object sought after both by the miller and the baker, is the production of a white and light loaf. Experience has taught the miller that the flour which makes the whitest loaf is obtained from the centre of the grain; but that the flour which is the most economical, and contains the largest portion of sound gluten, is that which is obtained from the external portion of the grain. But while he endeavors to secure both these portions for his flour,

he takes the greatest care to avoid as much as possible, by fine dressing, &c., the mixture with them of any part of the true external coat which forms the bran, knowing that it will cause a most serious deficiency in the color of the bread after fermentation.

It is generally supposed that the dark color of brown bread—that is, of bread made from the whole wheaten meal—is attributable to the colored particles of the husk or outer covering of the grain. But such is not really the case. The colored particles of the bran are of themselves only capable of imparting a somewhat orange color to bread, which is shown to be the fact when whole wheaten meal is made into bread by a process where no fermentation or any chemical changes whatever are allowed to take place. Some few years since, a process was invented in America for removing the outer seed coat of the wheat grain without injuring the grain itself, by which it was proposed to save that highly nutritious portion which is torn away, adhering to the bran in the ordinary process of grinding, and lost to human consumption. The invention was brought under the notice of the French Emperor, who caused some experiments to be made in one of the government bakeries to test its value. The experiments were perfectly satisfactory so far as the making of an extra quantity of white flour was concerned, but when this flour was subjected to the ordinary process of fermentation and made into bread, much to the astonishment of the parties conducting the experiments, and of the inventor himself, the bread was brown instead of white. The consequence, of course, has been that the invention has never been brought into practical operation.

It has been estimated that as much as ten or twelve per cent. of nutritious matter is separated adhering to the bran, which is torn away in the process of grinding, and until very lately this matter has been considered by chemists to be gluten. It has, however, been shown by M. Mège Mouriès to be chiefly a vegetable ferment, or metamorphic nitrogenous body, which he has named Cerealin, and another body, vegetable Caseine.

Cerealin is soluble in water, and insoluble in alcohol. It may be obtained by washing bran, as procured from the miller, with cold water, in which it dissolves, and it may be precipitated from the aqueous solution by means of alcohol; but, like pepsin, when thus precipitated it loses its activity as a solvent or ferment.

In its native state or in aqueous solution, it acts as the most energetic ferment on starch, dextrine, and glucose, producing the lactic and even the butyric changes, but not the alcoholic.

It acts remarkably on gluten, especially when in presence of starch, dextrine or glucose. The gluten is slightly decomposed at first, giving ammonia, a brown matter, and another production which causes the lactic acid change to take place in the starch and glucose. The lactic acid thus produced immediately combines its

activity with that of the cerealin, and the gluten is rapidly reduced to solution.

The activity of the cerealin is destroyed at a temperature of 140° Fah., according to M. Mouriès, but my own experiments show that it is simply suspended even by the heat required to cook bread thoroughly; thus bread made without fermentation, of whole wheaten meal, or of flour in which there is a large proportion of cerealin, will, if kept at a temperature of about 75° to 85° Fah., pass rapidly into a state of solution, if the smallest exciting cause be present, such as ptyaline or pepsin, or even that small amount of organic matter which is found in impure water—while the same material, when it has been subjected to the alcoholic fermentation, will not be affected in a like manner.

The activity of cerealin is very easily destroyed by most acids, also by the presence of alum; and while it is the most active agent known in producing the earlier changes in the constituents of the flour, it cannot produce the alcoholic, but as soon as the alcoholic is superinduced, the cerealin becomes neutralized and ceases to act any longer as a solvent. M. Mouriès, taking advantage of this effect of alcoholic fermentation, has adopted a process by which he is enabled to separate from the bran all the cerealin and caseine which are attached to it. He subjects the bran to active alcoholic fermentation, which neutralizes the activity of the cerealin, and at the same time separates the nutritious matter; and then having strained this through a fine sieve, he adds it to the white flour in the preparation of white bread, by which an economy of ten per cent. is effected, and the color of the bread is not injured.

The peculiar action of cerealin as a special digestive solvent of the constituents of the flour—gluten and starch—has been practically tested by Mr. Stephen Darby, of Leadenhall street, in a series of careful experiments. He found that when two grains of dry cerealin were added to 500 grains of white flour, and the whole digested in half an ounce of water at a temperature of 90° for several hours, ten per cent. more of the gluten, and about five per cent. more of the starch, were dissolved than when the same quantity of flour was subjected to digestion without the addition of cerealin, but in which of course there was a small amount of cerealin that is present in all flours. The action of cerealin upon the gluten of wheat is precisely similar to that of pepsin on the fibrine of meat. Pepsin, acting alone on fibrine dissolves it, but very slowly; but if lactic acid be added, solution takes place very rapidly. In like manner the starch present with the gluten of wheat is acted upon by the cerealin, and produces the necessary lactic acid to assist in the solution of the gluten by cerealin.

With the knowledge thus obtained of the properties of this substance cerealin, it is not difficult to understand why the administration of bran-tea with the food of badly-nourished children, pro-

duces the remarkable results attributed to it by men both experienced and eminent in the medical profession; and why, also, bread made from whole wheaten meal, which contains all the cerealin of the grain, should prove so beneficial in some forms of mal-assimilation, notwithstanding the presence of the peculiarly indigestible and irritating substance forming the outer covering of the grain.

It will be seen that in all the methods of bread-making hitherto adopted, the peculiar solvent properties of this body, cerealin, have been sought to be neutralized simply because it destroys the white color of the bread during the early stages of panary fermentation. It is by thus destroying the activity of the special digestive ferment which Nature has supplied for the due assimilation by the economy of the constituents of the wheaten grain, that wheaten bread is rendered incapable of affording that sustenance to the laboring man which the Scotchman obtains from his oatmeal porridge. Although the new bread has been as yet but little more than experimentally introduced to public consumption, I have already received from members of my own profession, who have recommended it in their practice, as well as from non-professional persons, accounts of the really astonishing results that have followed its use in cases of deranged digestion and assimilation. Private gentlemen have sought interviews with me to record the history of their recovery to health, after years of suffering and misery, by the simple use of the bread as a diet. Children that have been liable to convulsive attacks from an irritable condition of the alimentary canal and nervous system, have been perfectly free from them immediately the new bread was substituted for fermented bread. And cases are now numerous that have been communicated to me by medical men of position, in which certain distressing forms of dyspepsia, which had remained intractable under every kind of treatment, have yielded as if by magic almost immediately after adopting the use of the aërated bread.

The delicate flavor of the new bread renders it peculiarly grateful to the stomachs of invalids and children, as well as of those whose tastes have not become vitiated by the habitual use of baker's bread, which is slightly sour, and tastes of yeast. The new bread was supplied to two wards in Guy's Hospital in place of the ordinary bread (which is of a very fine quality, made on the premises,) for two months, and in no case were there any pieces left in the wards unconsumed, while of the fermented bread large quantities of scraps were collected daily, for the consumption of which the appetites of the patients have been deficient.

That persons who have been long used to the strong yeasty-flavored bakers' bread should consider the new bread tasteless at first is not to be wondered at, since the delicate sense of taste is of all other senses the most easily lost by rough usage. Hence

the argument put forth in defence of adulteration by some London tradesmen, especially the beer-sellers, that the public will not buy the pure article, as it is wanting in the flavor to which they have been accustomed; and hence, also, the dislike of the Viennese of the fresh oysters supplied to them when the railway was completed, as they deemed them insipid, after the habitual use of oysters slightly decomposed, with which they had been supplied when it required a lengthened period to transport them from the sea.

I am disposed to attribute the beneficial effects of the new bread to two causes. The one to the *absence* of the prejudicial matters imparted to ordinary bread by the process of fermentation, and the other to the *presence* in the bread, unchanged, of that most essential agent of digestion and assimilation, cerealin.

I believe the prejudicial matters imparted to bread by fermentation to be chiefly two—acetic acid and the yeast-plant. The first is produced in large quantities, especially in hot weather, by the oxydation, by atmospheric contact, of the alcohol produced. The second is added when the baker forms his sponge, and is also rapidly propagated during the alcoholic fermentation, and cannot of course be afterwards separated from the other materials in the manner that the yeast and the other *débris* of fermentation separate themselves from wine and beer by precipitation in the process of fining. Nor is the life of the yeast-plant generally destroyed in baking, because it requires to be retained at the boiling point for some time before it is thoroughly destroyed, and bread is generally withdrawn from the oven, for economical reasons, even before the centre of the loaf has reached the temperature of 212°. It is not difficult to understand how the most painful and distressing symptoms and derangements may follow the use of bread in which the yeast-plant is not thoroughly destroyed previous to ingestion, and in those cases of impaired function in which the peculiar antiseptic influence of the stomachal secretions is deficient, and is incapable of preventing the development of the yeast-plant in the stomach, and the setting up of the alcoholic fermentation to derange the whole process of digestion and assimilation.

The presence of cerealin in bread is as beneficial as that of acetic acid and the yeast-plant is prejudicial. Digestion, or the reduction of food, is evidently essentially dependent on the action of a class of substances which chemists, for want of a better term, have called ferments—to these substances belong pepsin, ptyaline, emulsion, diastase and cerealin; these are evidently types of a very numerous class, which act by producing those molecular changes in organic substances in which digestion consists: and since the purpose of digestion or solution is to prepare from heterogeneous substances taken as food a chyle, which shall not only, when absorbed, present all the elements of healthy

blood, but shall, previous to absorption, possess the properties which will constitute it the proper stimulus to the functional activity of the lacteals, it would appear to be necessary that each distinct substance taken as food should be furnished, not with its simple chemical solvent, but with that peculiar form of solvent or ferment which alone can carry it through those molecular changes which shall terminate in the production of healthy chyle. Hence we should infer that a substance was digestible or indigestible just in proportion to the provision that is made for its reduction to the standard of healthy chyle, and that substances which have hitherto been incapable of affording any nutrition whatever, may at some future day be rendered highly nutritious, simply by adding to them suitable ferments, artificially obtained or otherwise, that shall secure their passage through the proper molecular changes. Indeed, I think this subject opens up to us that very wide field of inquiry, as to whether the cause and prevention of disease, and the beneficial administration of remedies, may not, for the most part, if not entirely, be dependent on the action of substances analogous to such bodies as ptyaline, pepsin, cerealin, &c., acting in concord with, or retarding and opposing the vital functions of tissues; and that by more profound inquiry in this field of research, the physiologist and the pathologist may not at a future day lay the foundation of true scientific Medicine.—*London Medical Times and Gazette.*

Bibliographical Notices.

Leidy's Elementary Treatise on Human Anatomy.—(Correction.)

In a late number of this Journal (Nov. 8th) some mis-statements were made with regard to Wilson's System of Anatomy. The error arose from our having consulted only the older edition (1854) of the work. The edition of 1859 contains 146 more plates, and 43 more pages, of a closer type, than the earlier ones; making, in all, an octavo volume of 598 pages, with 397 illustrations.

The preface states that it contains one fourth more matter, and we have no doubt this is the truth. The work has been revised by the author; many parts—as the Origin of Muscles—re-written; much added incidentally, in the text, on new microscopic and other relations; and a new introduction on the Elements prepared, by the present editor, Dr. Gobrecht.

To specify briefly some of the more important additions in illustration. On Osteology, we have new plates of the lacunæ, the periosteum, the epiphyses, the spinal column, and the growth and development of the *os innominatum*, and of teeth. The costo-sternal articulations; the ocular fascia; the muscles of the nose and perinæum; the spermatic canal; the saphenous opening; the valves of veins, and the course of the internal saphenous, are freshly represented. There are several new cuts on the encephalon, and the eye and ear; the gan-

glia of the sympathetic: the mediastina: the supra-renal capsules: the kidneys: erectile tissue, and the uterus. As a rule, the new illustrations relate more to histology. The wood engraving is a little superior to that of the old edition, but is inferior to the English one.

Wilson pursues the same arrangement as formerly. The text on particular bones, as the temporal, for instance, is the same; the veins also seem identical in description, with other editions, except that their intimate structure is treated of at greater length. The whole nervous system is little, if at all, altered. Some muscles—as the pectoral—are better described than formerly: and obviously, many of them are re-written. The muscular fibres of the uterus, and the microscopic anatomy and appearance of the spleen and supra-renal bodies, are new. Much has been added on the mucous glands of the mouth and pharynx, the epithelia of the alimentary tract, and the intestinal glands. In fact, these form almost a new chapter by themselves. The typography and paper are equal to the former editions. Thus this standard text-book of our schools, it will be seen, has been brought up to the times, enlarged, and every way improved.

D. W. C.

Ophthalmic Hospital Reports.

The eleventh No. of the Ophthalmic Hospital Reports, published in London, under the auspices of the surgeons of the Royal London Ophthalmic Hospital, fully sustains the very high character of the previous numbers. The articles comprised in it are remarkable for originality and clear good sense, and several of them are of rare value.

The editor, Mr. Streatfeild, himself contributes some of the most interesting papers, all of them showing accuracy of observation and novel and skilful applications of ingenious methods of overcoming difficulties and attaining brilliant results, in what would have been regarded, not twenty years since, as hopeless cases. His explanations of his operation for "Corelysis," or "pupil opening," in cases of partial or complete occlusion of the pupil, by division of the adhesions connecting its edge with the cornea, the iris, or with false membranes, and the statement of the results obtained, are very satisfactory. The staff of the Hospital are to be congratulated on having such a representative in the editorial field, and, on the other hand, Mr. Streatfeild may be felicitated on the fellowship of such coadjutors as those who share with him the honor of contributing to fill the pages of the journal which he conducts with so much talent.

So great an impulse has been given to ophthalmic surgery by the invention, within a brief period, of improved instruments, and ingenious modifications of operative measures, and by the application of the ophthalmoscope to the study of the formerly hidden and obscure diseases of the deeper parts of the eye, that the publications relating to this branch of our art show as marked an advance over those of only a quarter of a century ago, as do the treatises on physiology compared with works published before the discovery of the circulation of the blood.

Such a journal, embodying everything which may increase our knowledge of ophthalmic affections, is much needed, and should be extensively patronized and read.

W.

Memoranda Medica, or Note Book of Medical Principles. By Henry Hartshorne, A.M., M.D., Prof. of Theory and Practice of Medicine in the Medical Department of Pennsylvania College, &c. Philadelphia: J. B. Lippincott & Co. 1860.

Nothing is of more value to the student or practitioner than a correct idea of what he is to look for in the investigation of disease. But few symptoms are pathognomonic. Their meaning generally lies in their connection, and is therefore to be ascertained only by considering all the circumstances under which they may occur. But few are such masters of their profession that they always have at their command the materials for forming a correct diagnosis by exclusion; for, to do this satisfactorily, implies the most accurate knowledge of all branches of medicine. A work, therefore, which enables us at a glance to comprehend the extent and character of the field in which we are to labor, is of very great assistance, and such a work we appear to have before us. It is divided into five parts:—Etiology, Semeiology, General Pathology, Nosology, and General Therapeutics. Further than this we cannot analyze the book, for it is, itself, the closest possible analysis. Intended merely to point the way, it contains no more information than is necessary for that purpose, and this is its great merit. We can most sincerely recommend a work which does well what it pretends to do. A complete glossary at the end of the volume gives it additional value, and all these advantages are presented in excellent print, upon excellent paper.

Compendium of Human Histology. By C. Morel, Prof. agregé à la Faculté de Médecine de Strasbourg. Illustrated by twenty-eight plates. Translated and Edited by W. H. Van Buren, M.D., Prof. of General and Descriptive Anatomy in the University of New York, &c. &c. New York: Baillière Brothers, 440 Broadway.

The editor states that he has "prepared M. Morel's Compendium of Histology for the use of the American Medical Student, in consequence of the excellence and fidelity of its plates, and the clear and concise manner in which all that is positively known of the science, up to the present moment, is set forth in the text."

These certainly are excellent reasons for undertaking the labor of preparing the work, and an examination of the latter shows that they are the true ones.

It is the best compendious treatise we have seen. The plates are admirable, some of them illustrating most beautifully the views of Virchow upon the office of the cell in the formation of tissues, both normal and pathological.

This doctrine, as advocated by the Berlin Professor, is so beautiful, so satisfactory, and apparently so true, that it cannot be too much insisted upon, and we are glad to see such notice taken of it here. Throughout the work there is evidence that brevity is not the result of haste, but of a most careful selection of important points, by one thoroughly acquainted with the whole subject.

The Pocket Anatomist for the use of Students. By M. W. Hills, formerly Lecturer on Anatomy and Physiology at the Westminster Hospital School of Medicine. Philad.: Lindsay & Blakiston. 1860.

This little re-print of an English book, contains what such works

usually do, a condensed description of those parts of the body, with which it is most important that students should be conversant. It will undoubtedly be of assistance to those who have labored through larger treatises, which are perhaps encumbered by details that obscure the most important points.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, DECEMBER 6, 1860.

OBITUARY NOTICE OF HENRY M. DANIEL.—At the Massachusetts General Hospital, on Thursday evening, November 22d, after an illness of seven days, in the 20th year of his age, died, Henry M. Daniel, a student of medicine. He came here a stranger, from Prince Edward's Island, but in a few days he was known to and respected by his teachers and companions for the kindliness and gentleness of his demeanor, as well as for his zeal and diligence in the prosecution of his studies. He very early manifested a taste for the profession to the pursuit of which he had been devoting his energies for nearly two years. His natural gifts and acquirements, his love for patient labor, were such as to give to his friends confident hopes of his future success. His parents parted with him only one month ago, reluctantly, as he was convalescent from an attack of typhoid fever, yielding to his earnest desire to be present at the opening of the winter course of lectures in this city. They had heard from him only once, when they were informed, by telegraph, of his severe illness. Arriving in Boston, after a long and toilsome journey, at an inclement season of the year, the father was told that this his first-born son had been dead already five days. The bitter disappointment and the grief attendant upon the announcement of such tidings can be appreciated only by parents, but must be respected by all.

We are told of Archbishop Leighton, that he used often to say, that if he were to choose a place to die in, it should be an Inn, it looking so like a pilgrim's going home, to whom this world was all as an Inn; and that being away from the tenderness and care of friends was not altogether to be lamented, as thus a dying man would be more free to make his preparations. This wish was granted. It was a comfort to the bereaved father, in this case, to learn that his own efforts to train his child in the way that leadeth to eternal life, and to impart that knowledge on earth which is necessary for a denizen of heaven, had not been in vain. The sudden and painful illness, too severe for new lessons or new habits, the absence of father and mother, brother and sister, the guides and friends of early youth, did not interfere with an earnest search for and prayer to that Friend who is ever near and ready to help all who call upon Him. The young man's strength, which may have been his glory, was fast leaving him; but it was sufficient for an earnest supplication for pardon, for an avowal of unworthiness of the least of God's mercies, and at the same time of an assured hope and a well-grounded trust in Him who died for his sins and rose again for his justification, fully warranting the clergyman

summoned in the last hours to administer that rite of religion so appropriate to one leaving this world for another.

The members of the School, professors and students, joined with the father in the religious services at the Hospital, and in following the remains to their resting place. Whilst, as journalists, charged with recording events and deducing lessons, we would express ourselves for the departed in those three Latin words so full of meaning—"*requiescat in pace*"; whilst we would assure the sorrowing friends at a distance of our interest and sympathy, we will hope for ourselves that this young stranger may not have come amongst us to fall a victim to exposures and labors, not to be avoided by those who would perfect themselves in a knowledge of the art of healing, without having enabled us to learn something of the privileges and duties of hospitality; nor without a warning of the habitual diligence necessary, if we would be ready to receive a summons which we so often see given to others, and for which on this account we may so easily be unprepared.

St. Luke's Hospital, New York.—From the Annual Report of this Institution, we learn that during the past year, there have been treated in this hospital 468 patients; males, 232; females, 236. Of the entire number, 54 have been children; surgical, 167; medical, 301. There were 53 patients in the wards at the commencement of the year; 328 have been discharged during its course, and 85 are now in the wards. There have been 59 deaths and 4 casualties. Twenty-one surgical operations have been performed, eight of them capital. The results of these have been successful, except in one instance, a case of hernia in an old subject, where strangulation had existed for thirty-six hours prior to admission to the hospital. A large number of persons, suffering from recent injuries, have been received from the hands of the police, including twenty-two cases of fracture. In the medical wards there has been a very decided increase during the past year in the proportion of acute cases, though, as heretofore, those of a chronic character predominate. The ward devoted to the treatment of children, is a new and most important feature of the hospital. The necessity for such a department is amply shown by the fact, that it has been more rapidly and more constantly filled than any other in the house. The bill of mortality for the past year shows a reduction of over five per cent. from that of the previous year.

Naval Hygiene in France.—A Chair of Hygiene has just been founded in the Naval Medical School of Toulon, the first occupant being M. Roux, Surgeon-in-chief of the Imperial Navy. Now that a Military Medical School has been established at Chatham, the next question will be whether we shall go on imitating our neighbors, and think of the formation of a *Naval* Medical School. There would be nothing strange in this, seeing that England is the first maritime power of the world.—*London Lancet.*

Health of New Orleans.—As we predicted, New Orleans has escaped an epidemic of yellow fever this season. From conversations with reliable medical men, we find that there are those who do not believe we have had a genuine case of the disease, while equally reliable men think we have. One thing in favor of the first position is, that we are informed by the worthy House-Surgeon of the

Charity Hospital, that there has been no case of black vomit in the institution. As an humble observer of the history of yellow fever in New Orleans, we find in this simple fact satisfactory proof enough for ourself.—*New Orleans Medical News and Hospital Gazette.*

A NEGRO girl in this county (Washington), of medium stature, and but nineteen years old, was delivered the first of this year of two girls, one weighing 9 3-4 pounds and the other 9 1-4 pounds, both of which are still living, and bear such striking resemblance to each other as to perplex even the mother at times to distinguish them apart. The mother of the girl gave birth to seventeen children—eight of them at four accouchements, and she herself was one of a pair of twins. —*Georgia Medical and Surgical Encyclopedia.*

DENTAL SOCIETY.—A new society has been formed under the name of the Kentucky State Dental Association, W. D. Stone, President. Some few subjects were discussed; members appointed to read essays, and adjourned to reassemble in Louisville the second Tuesday of April, 1861.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, DECEMBER 1st, 1860.

DEATHS.

	Males.	*Females*	*Total*
Deaths during the week,	35	38	73
Average Mortality of the corresponding weeks of the ten years, 1850–1860,	37.3	35.4	72.7
Average corrected to increased population,	..	..	80.9
Deaths of persons above 90,	..	..	..

Mortality from Prevailing Diseases.

Phthisis.	Chol. Infan.	Scar. Fev.	Pneumonia.	Measles.	Smallpox.	Dysentery.	Typhoid Fever.
10	2	5	3	0	0	0	4

METEOROLOGY.

From Observations taken at the Observatory of Harvard College.

Mean height of Barometer,	29.946	Highest point of Thermometer,	55°
Highest point of Barometer,	30.570	Lowest point of Thermometer,	15°
Lowest point of Barometer,	29.250	General direction of Wind,	S.W. & N.W
Mean Temperature,	34°.8	Whole am't of Rain in the week	0.760

NOTICE.—Bills will be sent out to subscribers, in the numbers of the JOURNAL for this week and the next, and an early attention to them is respectfully solicited. Money received at the office by mail will be acknowledged by a receipt enclosed in the succeeding issue of the JOURNAL. Any subscriber not receiving his receipt thus enclosed, is particularly requested to notify the publisher at once. On account of the death of the collector (M. D. Hazeltine) who for many years has called annually on certain of our subscribers in New England, their bills have not been presented to them as usual, and are now enclosed in their respective copies of the JOURNAL. No one has yet been authorized to take the place of Mr. H., and it is hoped that those who have formerly paid their subscriptions to him will make it convenient to forward the amount now due, by mail, or by some private conveyance if preferred.

BOOKS RECEIVED.—A Colloquy on the Duties and Elements of a Physician. By Thomas S. Powell, Professor of Obstetrics in the Atlanta (Geo.) Medical College.—Medicine for the Million; An Introductory Lecture by Prof. M. L. Linton, St. Louis, Mo.—The Sixth Registration Report of South Carolina.

MARRIED,—In Cohasset, Nov. 29th, Dr. C. C. Tower, of South Weymouth, to Miss Clara L. Pratt, daughter of Charles Pratt, Esq., of Cohasset.

DIED,—At Lakeville, Nov. 26th, Dr. Moses Emery, aged 66.

Deaths in Boston for the week ending Saturday noon, December 1st, 73. Males, 35—Females, 38.—Accident, 1—anæmia, 1—asphyxia, 1—atelectasis pulmonum, 1—congestion of the brain, 1—disease of the brain, 2—bronchitis, 4—burns, 1—cancer (of the stomach), 1—cholera infantum, 2—consumption, 10—convulsions, 1—croup, 4—debility, 1—diarrhœa, 1—diphtheria, 1—puerperal disease, 4—dropsy, 2—dropsy of the brain, 4—erysipelas, 1—remittent fever, 1—scarlet fever, 5—typhoid fever, 4—gastritis, 1—disease of the heart, 3—intemperance, 2—disease of the kidneys, 1—congestion of the lungs, 3—inflammation of the lungs, 3—marasmus, 1—old age, 1—paralysis, 2—premature birth, 1—unknown, 1.

Under 5 years, 41—between 5 and 20 years, 4—between 20 and 40 years, 17—between 40 and 60 years, 6—above 60 years, 5. Born in the United States, 58—Ireland, 12—other places, 3.